C. CONTAL.

EXTENSIBLE TOOL.

APPLICATION FILED FEB. 26, 1914.

1,203,853.

Patented Nov. 7, 1916.

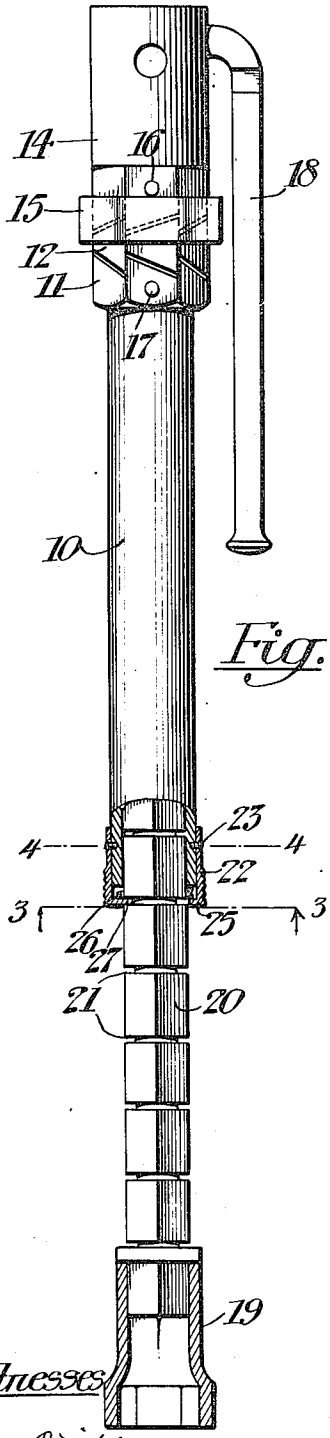


Fig. 1.

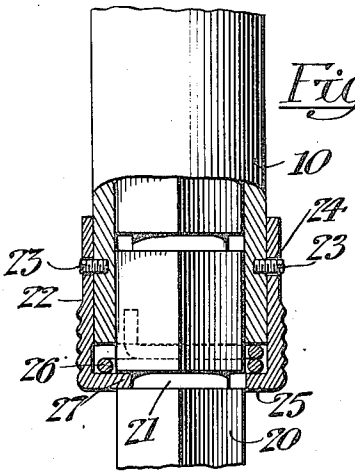


Fig. 2.

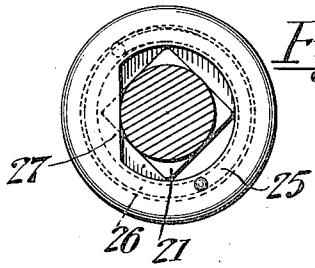


Fig. 3.

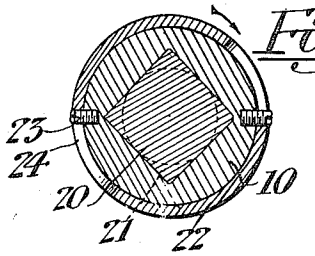


Fig. 4.

Witnesses

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EXTENSIBLE TOOL.

1,203,853. Specification of Letters Patent. Patented Nov. 7, 1916.

Application filed February 26, 1914. Serial No. 821,344.

To all whom it may concern:

Be it known that I, CAMILLE CONTAL, a citizen of the Republic of France, and resident of St.-Cloud, Seine and Oise, in the Republic of France, have invented certain new and useful Improvements in Extensible Tools, of which the following is a specification.

This invention relates to certain improvements in tools and has for its object to facilitate the ready adjustment of the work-engaging part, lengthwise of the holder or handle, whereby the effective length of the tool handle may be varied in accordance with the character or accessibility of the work to be performed.

My invention involves the forming of the handle or holder of two telescoping sections preferably non-rotatable in respect to each other, with easily operated locking means for retaining the sections in the desired longitudinal adjustment.

A further feature of my invention resides in the adjusting and locking means *per se* which is applicable not only to tools but also to various other forms of mechanism or apparatus where it is desired to lock in the desired adjustment two telescoping parts.

In the accompanying drawings, I have illustrated my invention as applied to the form of tool shown in my prior Patent No. 751,055, granted February 2nd, 1904, and reissued August 15th, 1905, No. 12,379. I wish it specifically understood that my invention is not limited to use in connection with merely this specific form of tool but may be employed in other forms and that various changes in the structural features of the specific form of adjustment may be made within the scope of my invention.

In these drawings, in which similar characters of reference indicate corresponding parts throughout the several views: Figure 1 is a side elevation of a tool constructed in accordance with my invention and having a portion thereof broken away; Fig. 2 is an enlarged sectional detail similar to a portion of Fig. 1; and Figs. 3 and 4 are transverse sections on the lines 3—3 and 4—4 respectively of Fig. 1.

In the tool shown in my prior patent above referred to, there is employed a handle member in the form of a hollow stem 10, provided with a head 11, rigid therewith, and presenting a series of teeth upon one end face thereof. Rotatably mounted upon the stem is a ratchet or collar 12, having teeth engaging with the teeth on the head 11, and also having teeth engaging with those of a rotatable head 14 movable longitudinally against an internal spring (not shown). The teeth upon opposite ends of the collar have their abrupt faces in opposite directions. A ring 15 is mounted to slide between stops 16 and 17 on the two heads, and is of such width that when in an intermediate position, it covers both edges of the ratchet collar 12, but when moved into engagement with one of the stops it covers only one edge. The head 14 has any suitable means as for instance a lever 18, whereby it may be rotated, but the ring 15 cannot rotate in respect to the parts with which it engages. With the ring 15 in one limiting position the head when rotated in one direction will cause a corresponding rotation of the stem 10, but when rotated in the opposite direction, will permit the teeth to slip past each other so that the head 14 will rotate independently of the stem. The direction of forced rotation of the stem 10 will depend upon the position of the collar 15. If the collar be in an intermediate position the stem 10 must rotate with the head 14 irrespective of the direction of rotation of the latter. I have not illustrated these parts in great detail, as they are fully set forth in my prior patent above referred to.

My invention involves primarily the means for holding the upper end of the handle member 10 at variable distances from the work engaging part. In the drawings I have illustrated a work-engaging part in the form of a tube 19 having one end presenting a polygonal bore adapted to receive a bolt head, nut or other member adapted to be turned by the tool. The character of the part will of course vary with the character of the work to be done and is of course removable from the handle and inter-changeable with other parts.

The handle includes not only the handle member 10 but also a member in the form of a bar 20, adapted to telescope with the stem or handle member 10. The rod may move longitudinally of the stem but is prevented from rotating in respect thereto, in any suitable manner, preferably by making both the bar and the bore of the stem of the same polygonal cross-section. Merely as an ex-

ample of one method which I may employ for securing the bar and tube in the desired relative adjustment, I have shown the rod provided with a plurality of grooves 21, spaced at short distances apart along its length, such distances depending upon the fineness of adjustment which is desired. The stem at its end opposite to the handle carries a collar 22, which is prevented from moving lengthwise of the stem but which may rotate through a limited angle. The outer surface of the collar may be roughened to facilitate turning if desired.

The collar has a terminal flange 25 one portion of which constitutes a projection 27, so positioned that it may intersect the bore of the stem 10, or may be moved out of alinement with the bore by a rotation of the collar. If the collar has an aperture in its end of a diameter equal to the maximum diameter of the rod 20, and if the projection 27 be formed as a cord of this circle, and of a length equal to the length of one side of the polygonal rod, then by rotating the collar to one position the edge of the projection 27 will coincide with the side of the rod, and when rotated to a second position, the projection will enter one of the grooves of the rod at a corner of the latter and prevent longitudinal movement of the rod. If the rod be square in cross-section as shown, then it is desired that the collar be prevented from rotating except through a predetermined angle of 45 degrees. The rotation of the collar may be limited in any suitable manner as for instance by pins 23 carried by the stem and extending through slots 24 in the collar.

A coil spring 26 may be held between the inwardly projecting flange 25 on the collar and the end of the stem as is shown in Fig. 2 and its ends may extend into apertures in the stem and collar. The spring would normally be under slight tension and hold the collar in the position indicated in Fig. 3 and in which each pin 23 would be at one end of its corresponding slot. The spring would permit a rotation of the collar to bring the pins to the opposite end of their slots and to bring the projection 27 out of a groove in the bar. The bar may then be moved lengthwise to secure the desired adjustment and by releasing the collar the projection 27 will reënter a slot, and prevent further longitudinal movement.

It is of course evident that the opening in the end of the collar may be of the same cross-sectional form as the rod so that when rotated different portions of this edge will enter a groove at all of the corners of the latter. It is also evident that various other means may be employed for retaining the members 10 and 20 in the desired relative longitudinal adjustment, and that the specific mechanism illustrated in Figs. 2, 3 and 4 may be employed in various other forms of apparatus than that shown in Fig. 1.

Having thus described my invention, what I claim as new and desire to protect by Letters-Patent, is:

1. In combination, a tubular member having a bore polygonal in section, a rod polygonal in section and adapted to move longitudinally within said bore, said rod having a plurality of recesses, a collar carried by said tubular member and having a flange adapted to enter any one of said recesses when in one position, and to permit the free longitudinal movement of said rod when in a second position, a spring normally tending to hold said collar in said first-mentioned position, and stops for limiting the movement of said collar.

2. A tool including a handle comprising two telescoping members held against rotation in respect to each other, a work-engaging part detachably secured to one end of one member, means at the other end of the other member for rotating said handle, the inner member having a series of recesses therein arranged along the length thereof and the outer member having a rotatable collar provided with a projection adapted to enter any one of said recesses to prevent relative longitudinal movement and adapted, when in a second position, to permit free relative longitudinal movement of said members.

3. A tool handle, comprising two telescoping members held against rotation in respect to each other, the inner member having a series of recesses therein arranged along the length thereof, a rotatable collar provided with an inwardly directed flange at one end of the outer member and including a portion adapted to enter any one of said recesses and prevent relative longitudinal movement and adapted, when rotated to a predetermined position, to permit free relative longitudinal movement of said members, and a coil spring between said flange and the extremity of said outer member and having engagement with each to normally hold said collar in locking position.

Signed at Paris, France, this 9th day of February A. D. 1914.

CAMILLE CONTAL.

Witnesses:

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